

What is claimed:

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1. A method of synchronizing data records stored in a first and second database, comprising the

5 steps of:

associating a pair of synchronization parameters with each data record stored in the first and second databases, the pair including a first synchronization parameter associated with the first database, and a second synchronization parameter associated with the second database;

updating a data record at the first database;

10 incrementing the first synchronization parameter associated with the updated data record at the first database;

transmitting a first update message from the first database to the second database, the first update message including the incremented first synchronization parameter, the second synchronization parameter, and the updated data record from the first database;

15 receiving the first update message at the second database; and

updating the data record at the second database using the information from the first update message.

2. The method of claim 1, further comprising the steps of:

20 coupling the first database to a host system; and

coupling the second database to a portable data communication device.

3. The method of claim 1, further comprising the step of:

providing a wireless data network for transmitting update messages between the two databases.

5 4. The method of 1, further comprising the step of:

designating one of the databases as the master database and the other database as a slave database.

10 5. The method of claim 1, further comprising the steps of:

designating the second database as a master database and the first database as a slave database;

after receiving the first update message at the second database, then determining whether a conflict has occurred between the two databases; and

15 if a conflict has occurred, then ignoring the first update message received at the second database.

6. The method of claim 5, wherein the determining step includes comparing the second synchronization parameter stored at the second database with the second synchronization parameter transmitted to the second database in the first update message.

20 7. The method of claim 1, further comprising the steps of:

designating the second database as a master and the first database as a slave;
updating the data record at the second database;

incrementing the second synchronization parameter associated with the updated data record at the second database;

transmitting a second update message from the second database to the first database, the second update message including the incremented second synchronization parameter, the first
5 synchronization parameter, and the updated data record from the second database;

receiving the second update message at the first database; and

detecting a conflict between the first and second databases, and updating the data record at the first database using the information from the second update message.

8. The method of claim 1, wherein the associating step further includes the step of modifying the data records by appending the pair of synchronization parameters to the data records and storing the modified data records in the respective database.

9. The method of claim 1, wherein the updating step further includes the steps of:

15 storing the updated data record at the second database; and

incrementing the first synchronization parameter associated with the data record at the second database so that it is synchronized with the first synchronization parameter associated with the data record at the first database.

20 10. The method of claim 1, wherein the data records represent calendar entries associated with an electronic calendar system.

11. A method of synchronizing data records stored in a host system and a portable data communication device, comprising the steps of:

associating a first device synchronization parameter and a first host synchronization parameter with the data records stored at the host system;

associating a second device synchronization parameter and a second host synchronization parameter with the data records stored at the device;

if a data record is updated at the host system, then updating the first host synchronization parameter, and transmitting a first update message to the device; and

if a data record is updated at the device, then updating the second device synchronization parameter, and transmitting a second update message to the host.

12. The method of claim 11, wherein the first update message includes the updated first host synchronization parameter, the first device synchronization parameter, and the updated data record stored at the host system.

13. The method of claim 11, wherein the second update message includes the updated second device synchronization parameter, the second host synchronization parameter, and the updated data record stored at the device.

14. The method of claim 11, further comprising the steps of:

receiving the first update message at the device; and

if there is no conflict detected at the device, then updating the data record at the device using the information from the first update message.

15. The method of claim 11, further comprising the steps of:

receiving the second update message at the host; and

if there is no conflict detected at the host, then updating the data record at the host using the information from the second update message.

16. The method of claim 11, further comprising the step of providing a wireless network for

transmitting the update message between the host and the portable data communication device.

17. A method of resolving conflicts in a data record synchronization system that synchronizes data records between a host system and a portable data communication device, comprising the steps of:

designating the host system as the master and the portable data communication device as the slave;

simultaneously updating a particular data record at both the host system and the portable data communication device;

transmitting a first update message from the host system to the portable data communication device, the first update message including a first host synchronization parameter, a first device synchronization parameter, and the updated data record stored at the host system;

transmitting a second update message from the portable data communication device to the host system, the second update message including a second host synchronization parameter, a second device synchronization parameter, and the update data record stored at the device;

receiving the second update message at the host system, detecting a conflict has occurred for the particular data record, and ignoring the second update message; and

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receiving the first update message at the host system, detecting a conflict has occurred for the particular data record, and updating the data record at the device using the information from the first update message.

- 5 18. A system for synchronizing data records stored in a first and second database, comprising:
- means for associating a pair of synchronization parameters with each data record stored in the first and second databases, the pair including a first synchronization parameter associated with the first database, and a second synchronization parameter associated with the second database;
 - means for updating a data record at the first database;
 - means for incrementing the first synchronization parameter associated with the updated data record at the first database;
 - means for transmitting a first update message from the first database to the second database, the first update message including the incremented first synchronization parameter, the second synchronization parameter, and the updated data record from the first database;
 - 15 means for receiving the first update message at the second database; and
 - means for updating the data record at the second database using the information from the first update message.

- 20 19. A data record synchronization system, comprising:
- a host system coupled to a host database, wherein the host database stores data records that have been modified to include a first host synchronization parameter and a first device synchronization parameter;
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a portable data communication device coupled to a device database, wherein the device database stores data records that have been modified to include a second host synchronization parameter and a second device synchronization parameter;

a network coupling the host system to the portable data communication device;

software operating at the host system for updating a data record and for generating a first update message that is transmitted to the device when a data record is updated at the host, the first update message including the first host synchronization parameter, the first device synchronization parameter, and the updated data record stored at the host system; and

software operating at the portable data communication device for updating a data record and for generating a second update message that is transmitted to the host when a data record is updated at the device, the second update message including the second host synchronization parameter, the second device synchronization parameter, and the updated data record stored at the device.

20. The system of claim 19, wherein the portable data communication device is a two-way pager.

21. The system of claim 19, wherein the portable data communication device is a cell phone.

22. The system of claim 19, wherein the portable data communication device is a PDA.

23. The system of claim 19, wherein the portable data communication device is a palmtop.

24. The system of claim 19, wherein the portable data communication device is a one and one-half way pager.

25. A method of synchronizing data records stored in a portable data communication device and
5 at least two host systems, comprising the steps of:

associating a pair of synchronization parameters with each data record stored in the host systems, the pair including a first synchronization parameter associated with one of the host systems, and a second synchronization parameter associated with the portable data communication device;

10 associating two pairs of synchronization parameters with each data record stored in the portable data communication device, each pair including a first synchronization parameter associated with one of the host systems, and a second synchronization parameter associated with the portable data communication device;

updating a data record at one of the host systems;

15 incrementing the first synchronization parameter associated with the updated data record at the one host system;

transmitting a first update message from the one host system to the portable data communication device, the first update message including the incremented first synchronization parameter, the second synchronization parameter, and the updated data record from the one host
20 system;

receiving the first update message at the portable data communication device; and

updating the data record at the portable data communication device using the information from the first update message.

26. The method of claim 25, further comprising the steps of:

incrementing the second synchronization parameter associated with the updated data record at the portable data communication device for the second host system;

transmitting a second update message from the portable data communication device to the
5 second host system, the second update message including the incremented second synchronization parameter for the second host system, the first synchronization parameter for the second host system, and the updated data record from the portable data communication device;

receiving the second update message at the second host system; and

updating the data record at the second host system using the information from the second
0 update message.